

CLAIMS

What is claimed is:

1. A system for managing power in a computer system, the computer system including a host, the system comprising:

a Universal Serial Bus (USB) hub;

at least one USB connector coupled with the USB hub; and

attach/removal detection logic coupled with the USB hub, the attach/removal detection logic for determining whether a USB device is connected to the at least one USB connector, logically decoupling the USB hub from the host if the USB device is not connected to the at least one USB connector and logically coupling the USB hub to the host if the USB device is connected to the at least one USB connector.

2. The system of claim 1 wherein the attach/removal detection logic is coupled with the host and wherein the attach/removal detection logic disconnects the USB hub from the host if the USB device is not connected to the at least one USB connector.

3. The system of claim 2 wherein the attach/removal detection logic provides a first signal when the USB device is not connected to the at least one USB connector and a second signal when the USB device is connected to the at least one USB connector, the system further comprising:

a connector coupled with the host, the attach/removal detection logic and the USB hub, the connector for connecting the USB hub to the host in response to the first signal and

7 for disconnecting the USB hub from the host in response to the second signal.

1 4. The system of claim 1 wherein the computer system further includes a power
2 supply coupled with the USB hub and wherein the attach/removal detection logic
3 disconnects the USB hub from the power supply if the USB device is not connected to the at
4 least one USB connector.

1 5. The system of claim 4 wherein the attach/removal detection logic provides a
2 first signal when the USB device is not connected to the at least one USB connector and a
3 second signal when the USB device is connected to the at least one USB connector, the
4 system further comprising:

5 a connector coupled with the power supply, the attach/removal detection logic and
6 the USB hub, the connector for connecting the USB hub to the power supply in response to
7 the first signal and for disconnecting the USB hub from the power supply in response to the
8 second signal.

1 6. The system of claim 1 wherein the computer system is allowed to enter a
2 lowest power state when the device is not connected to the at least one USB connector.

1 7. A method for controlling power in a computer system including a host, a
2 Universal Serial Bus (USB) hub coupled with the host and at least one USB connector
3 coupled with the USB hub, the method comprising the steps of:

4 (a) determining whether a USB device is connected to the at least one USB

5 connector;

6 (b) logically decoupling the USB hub from the host if the USB device is not
7 connected to the at least one USB connector; and

8 (c) logically coupling the USB hub to the host if the USB device is connected to
9 the at least one USB connector.

1 8. The method of claim 7 wherein the determining step (a), the logically
2 decoupling step (b) and the logically coupling step (c) are performed using attach/removal
3 detection logic.

4 9. The method of claim 8 wherein the logically decoupling step (b) further
5 includes the step of:

6 (b1) disconnecting the USB hub from the host if the USB device is not connected
7 to the at least one USB connector.

8 10. The method of claim 9 wherein the disconnecting step (b1) further includes
9 the steps of

1 (b1i) providing a first signal when the USB device is not connected to the at least
2 one USB connector and a second signal when the USB device is connected to the at least
3 one USB connector using the attach/removal detection logic, the attach/removal detection
4 logic being coupled with the host and the at least one connector; and

5 (b1ii) using a connector coupled with the host, the attach/removal detection logic
6 and the USB hub to connect the USB hub to the power supply in response to the first signal
7
8

9 and for disconnect the USB hub from the power supply in response to the second signal.

1 11. The method of claim 8 wherein the computer system further includes a power
2 supply coupled with the USB hub and wherein the logically decoupling step (b) further
3 includes the step of:

4 (b1) disconnecting the USB hub from the power supply if the USB device is not
5 connected to the at least one USB connector.

1 12. The method of claim 11 wherein the disconnecting step (b1) further includes
2 the steps of

3 (b1i) providing a first signal when the USB device is not connected to the at least
4 one USB connector and a second signal when the USB device is connected to the at least
5 one USB connector using the attach/removal detection logic, the attach/removal detection
6 logic being coupled with the power supply and the at least one USB connector; and

7 (b1ii) using a connector coupled with the power supply, the attach/removal
8 detection logic and the USB hub to connect the USB hub to the power supply in response to
9 the first signal and for disconnect the USB hub from the power supply in response to the
10 second signal.
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